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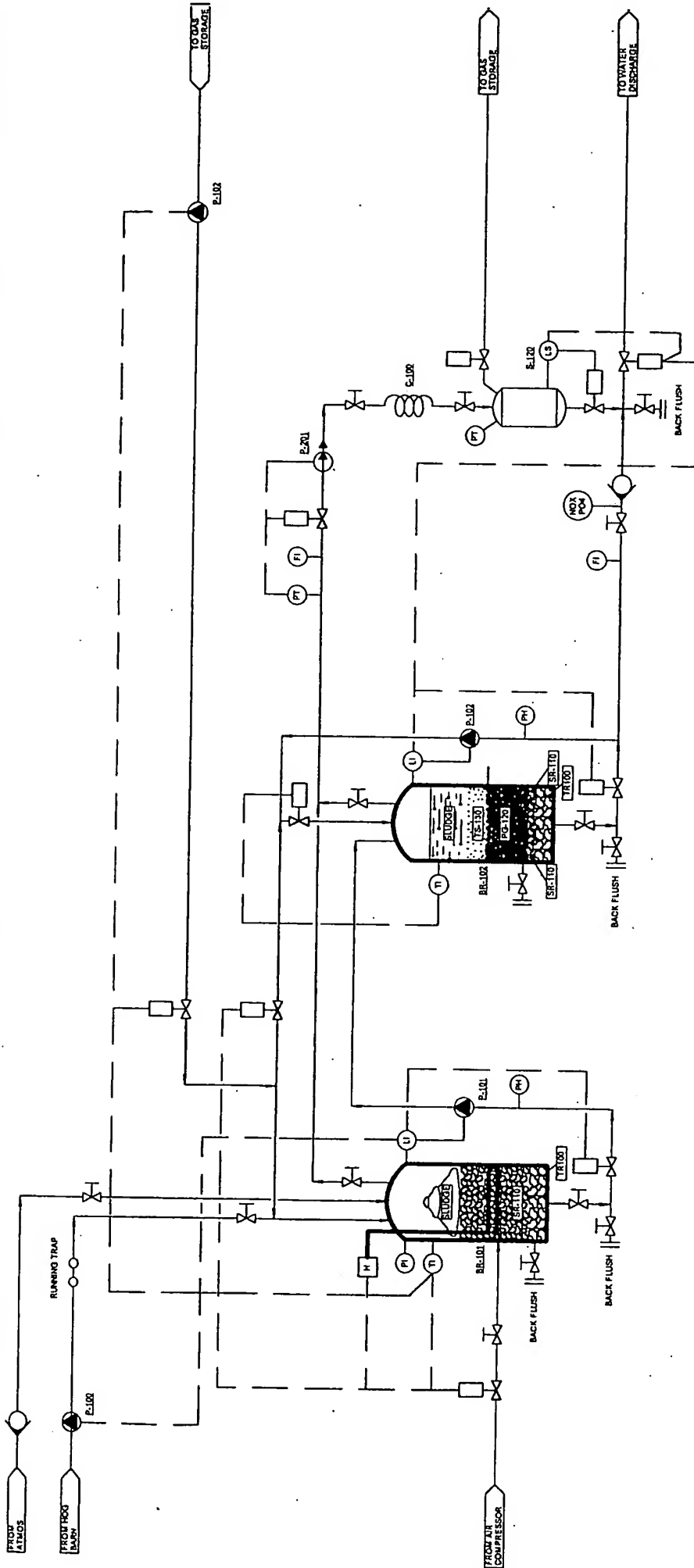
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FIG. 1

NOTES

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BASKIS & ASSOCIATES	
339 SOUTH CENTURY BLVD. JARVIS, ILLINOIS 61803	
PROJECT:	DRY CYCLE ANAEROBIC DIGESTER
DATE:	PROCESS FLOW DIAGRAM AND INSTRUMENTATION
BY:	DCAD
DATE:	DCAD-X-02-02

DESIGNED BY	J. D. BASKIS	DATE	05-09-01
CHECKED BY	PT BASKIS	DATE	05-12-01
APPROVED BY	PT BASKIS	DATE	05-12-01
SCALE	NONE		

REVISED	DATE	DESCRIPTION	BY	DATE
PTB	05-12-01	ADDED AIR PIPE NETWORK DRAIN PIPES FROM FILTERS	PTB	
PTB	05-22-01	ADDED INSTRUMENTATION	PTB	
PTB	02-18-01	ADDED INSTRUMENTATION	PTB	
APPD		DESCRIPTION	APPD	

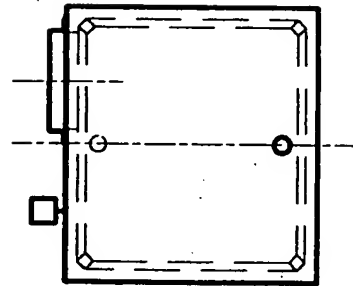
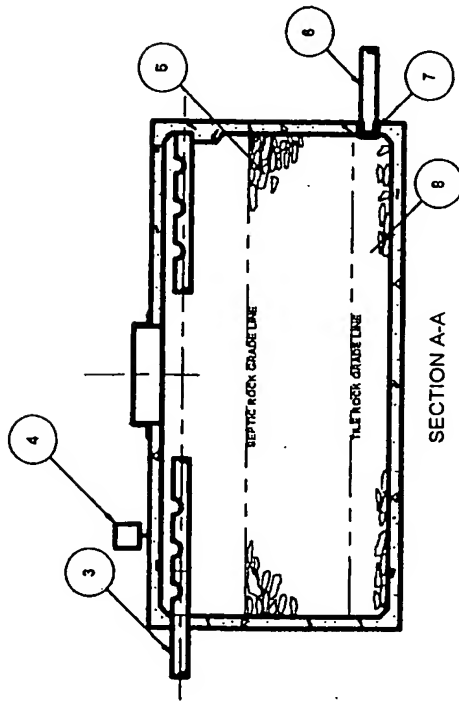
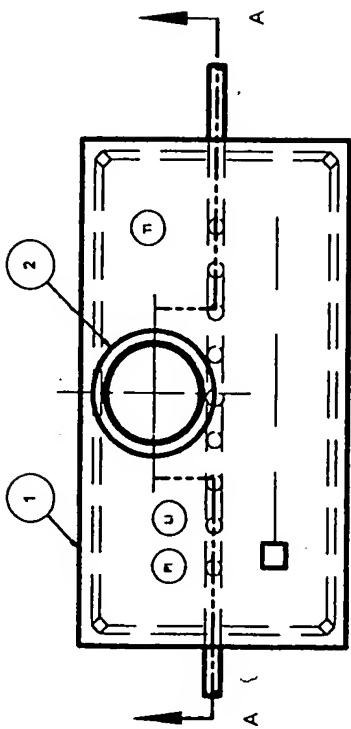
REVISED	DATE	DESCRIPTION	BY	DATE
PTB	05-12-01	ADDED AIR PIPE NETWORK DRAIN PIPES FROM FILTERS	PTB	
PTB	05-22-01	ADDED INSTRUMENTATION	PTB	
PTB	02-18-01	ADDED INSTRUMENTATION	PTB	
APPD		DESCRIPTION	APPD	

REVISED	DATE	DESCRIPTION	BY	DATE
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PTB	05-22-01	ADDED INSTRUMENTATION	PTB	
PTB	02-18-01	ADDED INSTRUMENTATION	PTB	
APPD		DESCRIPTION	APPD	

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PTB	02-18-01	ADDED INSTRUMENTATION	PTB	
APPD		DESCRIPTION	APPD	

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PTB	05-22-01	ADDED INSTRUMENTATION	PTB	
PTB	02-18-01	ADDED INSTRUMENTATION	PTB	
APPD		DESCRIPTION	APPD	

NO	DESCRIPTION	QTY	UNIT	RECD	MAIL
1	24" MANHOLE W/24" DIA	1	EA	1	PLR
2	SLUDGE HOLDING TANK, PRECAST REINFORCED CONCRETE, 1500 GAL	1	EA	1	PLR
3	SPREADER PIPE, 4 IN X 10 FT	1	EA	1	PLR
4	HEATER, CABLE TYPE	1	EA	1	PLR
5	SEPTIC ROCK PACKING, 6.00 X 118.00 X 36.00 DP	1	EA	1	PLR
6	DISCHARGE PIPE, 4", PCB	1	EA	1	PLR
7	SCREEN FOR 4" PIPE	1	EA	1	PLR
8	4" TILE ROCK PACKING, 6.00 X 118.00 X 10.00 DP	1	EA	1	PLR

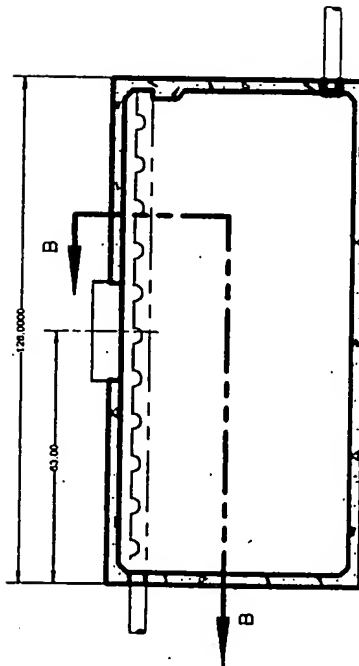
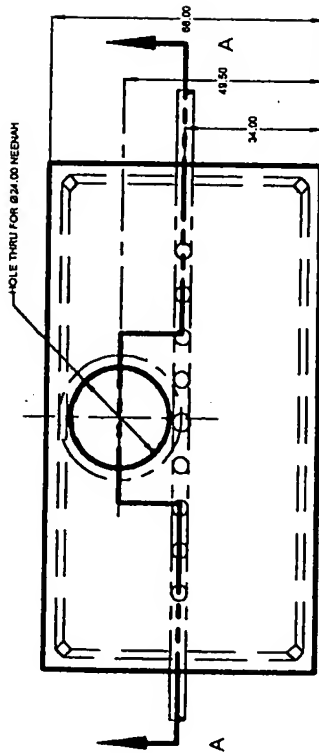


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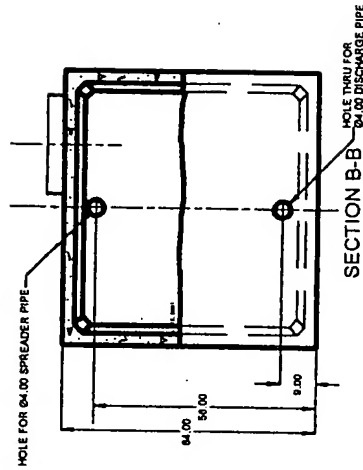
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FIG. 2

NOTES		F.D. MILLER		DATE 05-04-01		BASKIS & ASSOCIATES	
VOLUME: 1500		REVISED		DATE 05-04-01		330 SOUTH CENTURY BLVD. RANTOUL, ILLINOIS 61840	
LOCATION OF HOLES, ONE FOR EACH OF THE FOLLOWING IS TO BE ANCHORED: LEVEL SENSOR, TEMP SENSOR, PRESSURE SENSOR AND STRAP HEATER		APPROVED		DATE 05-07-01		PROJECT: DRY CYCLE ANAEROBIC DIGESTER	
You are hereby notified that these documents are confidential and shall not be copied or distributed by any means, to anyone, for any reason. The documents contain information which is the property of Paul T. Baskis whose office is located at 330 South Century Blvd., Rantoul, IL 61840. If you are not the intended recipient, please call 217-482-1440 for further instructions.		NO. BY DATE		DESCRIPTION		MODEL: BK-101 SOLIDS FILTER ASSEMBLY	
		APPROD		REVISIONS		SCALE: 1/2" = 1'-0"	
						DRAWING: DCAD-X-02-04	



SECTION A-A



SECTION B-B

FIG. 3

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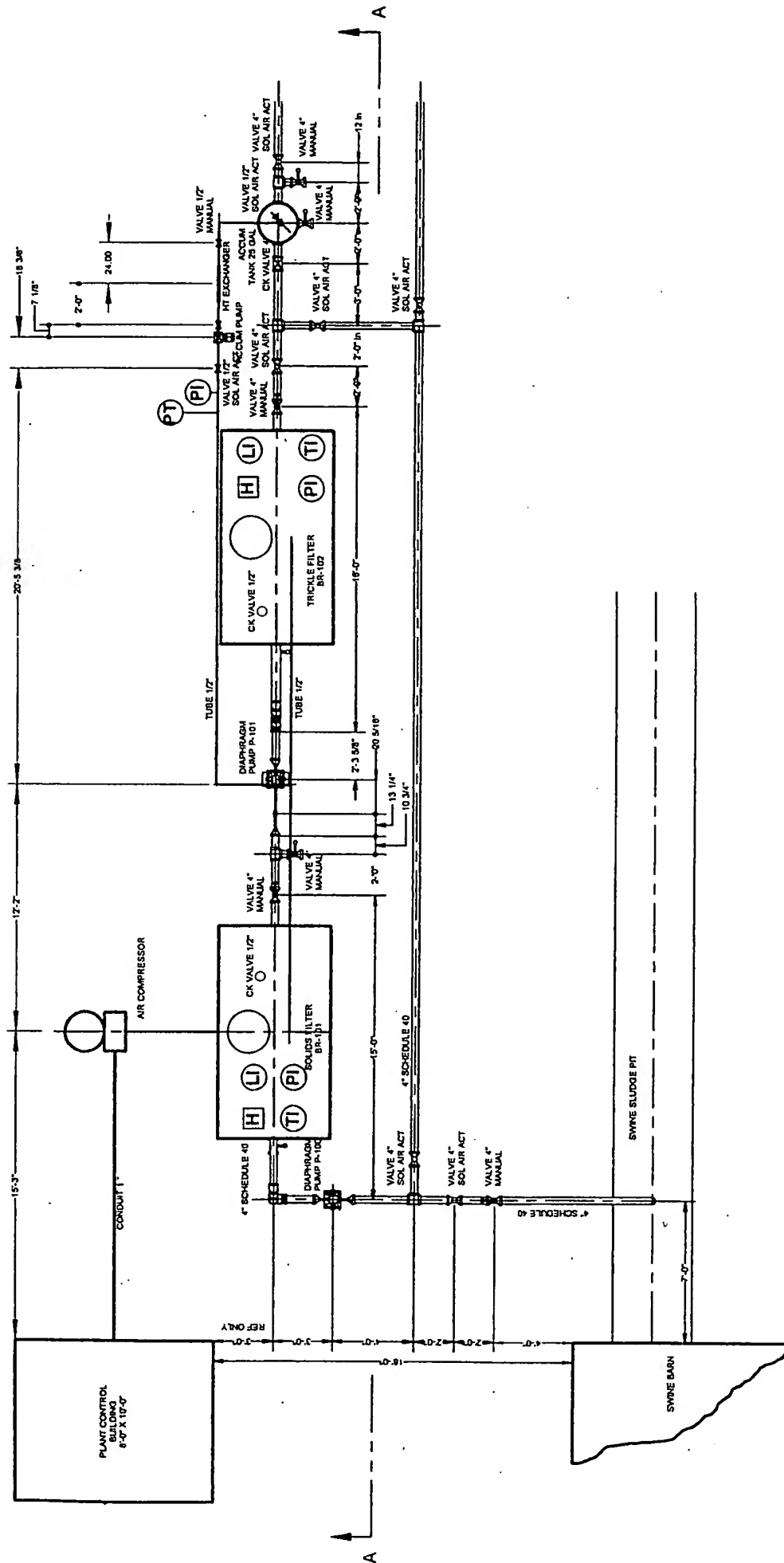
NOTES

WALL THICKNESS - 3 IN
CAPACITY - 1100 GAL
WEIGHT - 1700 LBS

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REVISIONS		DATE	BY	DESCRIPTION	APPROVED
A	FDM	05-07-01		REMOVED PERFORATED DISCHARGE PIPE, ADD SCREEN	
NO.	BY	DATE		DESCRIPTION	APPROVED

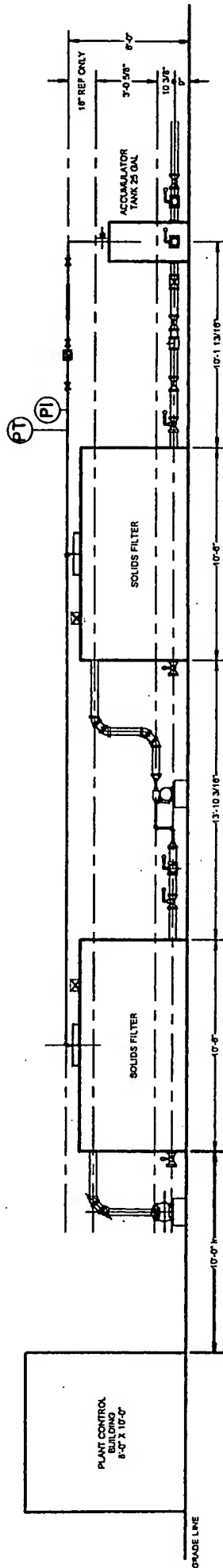
BASKIS & ASSOCIATES		DATE	05-07-01
339 SOUTH CENTURY BLVD. BAYTOWN, ILLINOIS 61122		DATE	
PROJECT: DRY CYCLE AMEROSIC DYESEN PROTOTYPE PLANT		DATE	
TITLE: 81-102 THICKLE FILTER VALVE DETAIL		DATE	
DRAWN BY: DCAD		DATE	
CHECKED BY: DCAD		DATE	
SCALE: 1/2" = 1'-0"		DATE	
PROJECT NO: DCAD-X-02-05		DATE	



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FIG. 5

NOTES										BASKIS & ASSOCIATES 333 SOUTH CENTURY BLVD RANTOUL, ILLINOIS 61830										PROJECT: DRY CYCLE ANAEROBIC DIGESTER										TITLE: PLANT LAYOUT - PLAN VIEW										JOB NO: DCAD-X-02-07										DATE: 05-18-01																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
										DESIGNED BY: F. D. MULLINX										CHECKED BY: P. T. BASKIS										DATE:										DATE:										SCALE: 1/4" = 1'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					



SECT A-A

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FIG. 6

NOTES

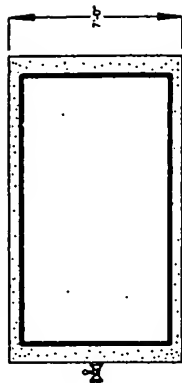
AT LEAST TWO SENSORS FOR TI IN EACH TANK

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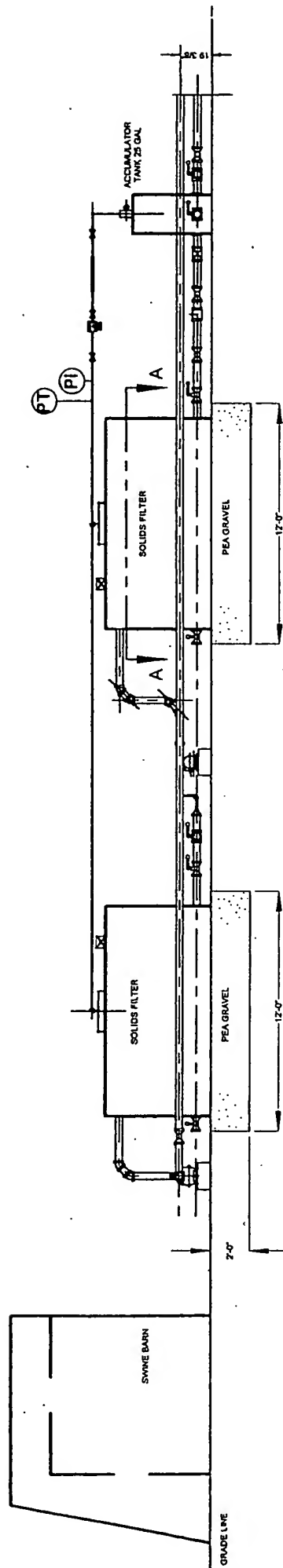
NO.	BY	DATE	DESCRIPTION	APPRO

DESIGNED BY	F. D. MILLER	DATE	05-18-01
CHECKED BY	PT BASKIS	DATE	06-18
APPROVED BY		DATE	11-18
CAD BY			
SCALE	1/4" = 1'		

BASKIS & ASSOCIATES	
339 SOUTH CENTURY BLVD RANTOUL, ILLINOIS 61868	
PROJECT	DRY CYCLE ANAEROBIC DIGGER
TITLE	PLANT LAYOUT - SECTION VIEW
DATE	DCAD
PROJECT NO	DCAD-X-02-08



SECTION A-A



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FIG. 7

NOTES

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BASKIS & ASSOCIATES	
339 SOUTH CENTURY BLVD BANTON, ILLINOIS 61810	
PROJECT	DRY CYCLE ANAEROBIC DIGESTER
TITLE	PLANT LAYOUT - ELEVATION VIEW
DATE	DCAD
BY	DCAD
NO.	DCAD-X-02-09

DESIGNED BY	F. D. MALLINX	DATE	05-15-01
CHECKED BY	PT BASKIS	DATE	
APPROVED BY		DATE	
SCALE	1/4" = 1'		

REVISIONS			
NO.	BY	DATE	DESCRIPTION

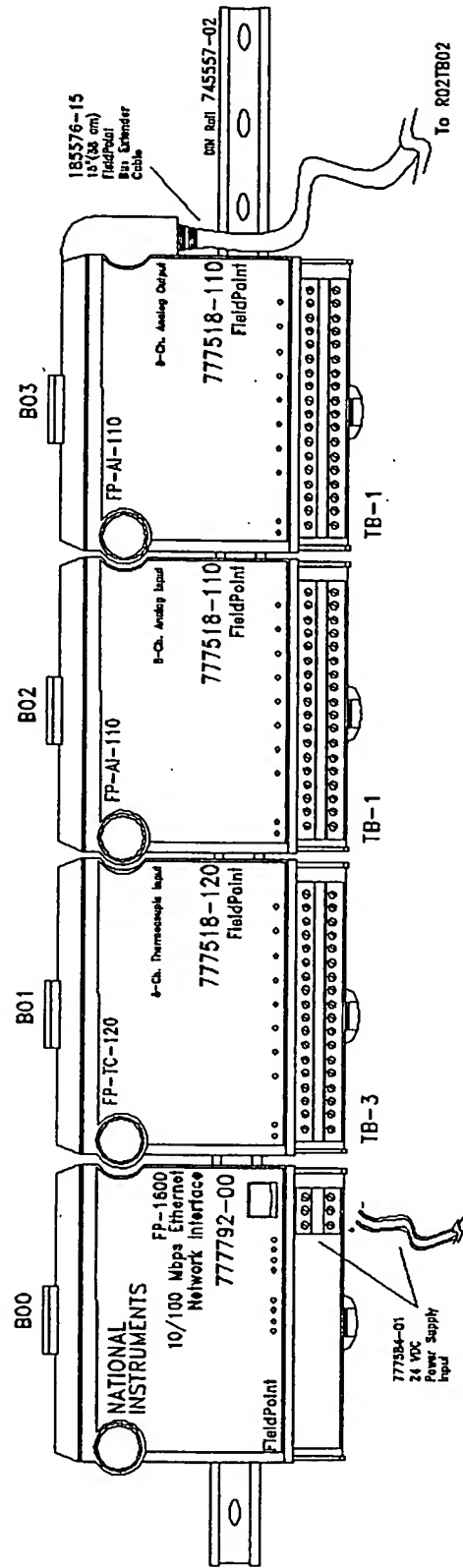
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1 2 3 4 5 6 7 8

23.6" Industrial Enclosure Box 777596-02

I/O Module Rack #01

4 I/O Modules w/ Terminal Base



B00 (Base #) FP-1600

Interface: 10BaseT/10Base2 Ethernet
Comm. rate: 10 Mb/s, 100Mb/s, auto negotiated
Max distance from host: 100 m per Ethernet segment
Max I/O modules per backplane: 9 slots
Power supply voltage: 11-36 VDC
Total back power: 7 W + (I/O module power x 1.15)
*This supplied power provides power for all I/O modules in the back

B01 (Base #) FP-TC-120

Input type: Thermocouple J, K, T, E, R, S, E, B
Number of inputs: 8 differential/3-wire
Updated rate, all channels: 0.1 s
Signal input bandwidth: 3 Hz
Overvoltage protection: 40V
Power Requirement: 350 mW
Power from network module: 350 mW
TB-3-----Isothermal Terminal Base

B02/B03 (Base #) FP-AI-110

Input type: Voltage
Voltage: ±80mV, ±300mV, ±1V, ±5V, ±10V, 0-1V, 0-5V, 0-10V
Current: 0-20mA, 4-20mA, ±20mA
Number of inputs: eight analog-ended
Overvoltage protection: 40V
Desaturated protection: 30mA
Power Requirement: 350 mW
Power from network module: 350 mW
TB-1-----Universal Terminal Base

Address Definition

R#B#C#

Channel number (00-03 or 00-15)
I/O Base number (00-03 or 00-04)
I/O Module Rack number (01-49)

R#TB#

Terminal or I/O Base number (00-03 or 00-04)
I/O Module Rack number (01-49)

24V DC POWER BUDGET

FOR RACK 01 CONFIGURATION

Total Supplied Power for Rack 01 & 02 = 8.5 W

R01B01 Requires = 350 mW

R01B02 Requires = 350 mW

R01B03 Requires = 350 mW

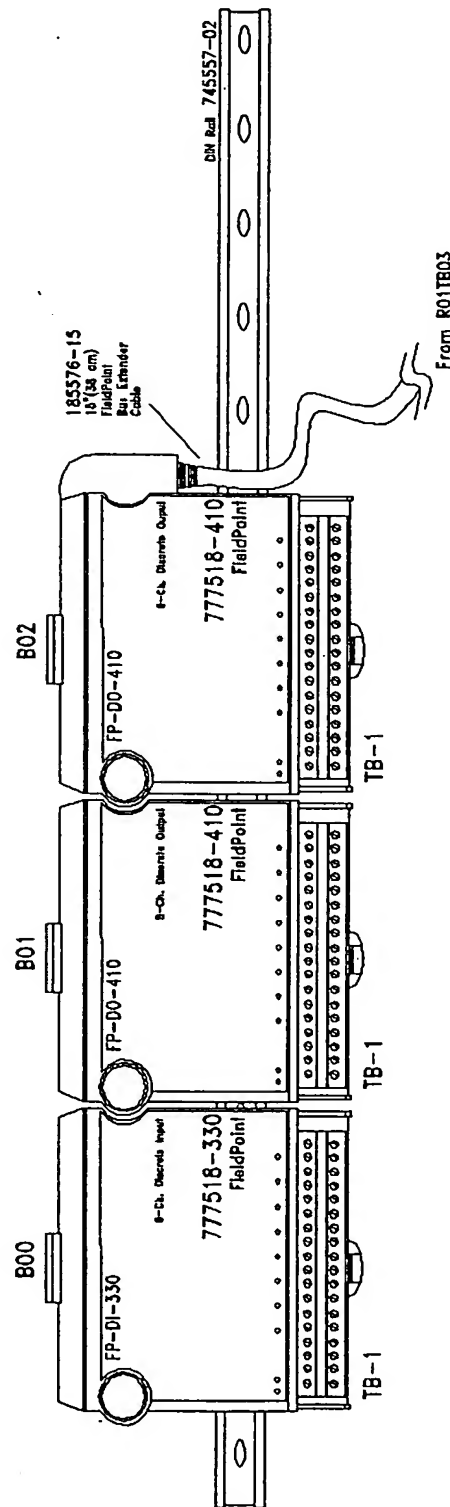
TOTAL POWER REQ. FOR RACK 01 = 1.05 W

FIG. 8

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23.6" Industrial Enclosure Box 777596-02

I/O Module Rack #02



B0 (Base #) FP-DI-330
 Input type
 Voltage 5-30 VDC
 Number of inputs
 Input delay time
 Power Requirement
 Power from network module
 TB-1 Universal Terminal Base

B1 (Base #) FP-DO-410
 Output type
 Voltage 5-30 VDC
 Sourcing, channel protected with
 electronic resettable fuses
 Number of channels
 Leakage, overcurrent condition
 Propagation delay
 Power Requirement
 Power from network module
 TB-1 Universal Terminal Base

B2 (Base #) FP-DO-410
 Output type
 Voltage 5-30 VDC
 Sourcing, channel protected with
 electronic resettable fuses
 Number of channels
 Leakage, overcurrent condition
 Propagation delay
 Power Requirement
 Power from network module
 TB-1 Universal Terminal Base

Address Definition

R#B#C#
 Channel number (00-08 or 00-18)
 I/O Base number (00-03 or 00-08)
 I/O Module Rack number (01-99)

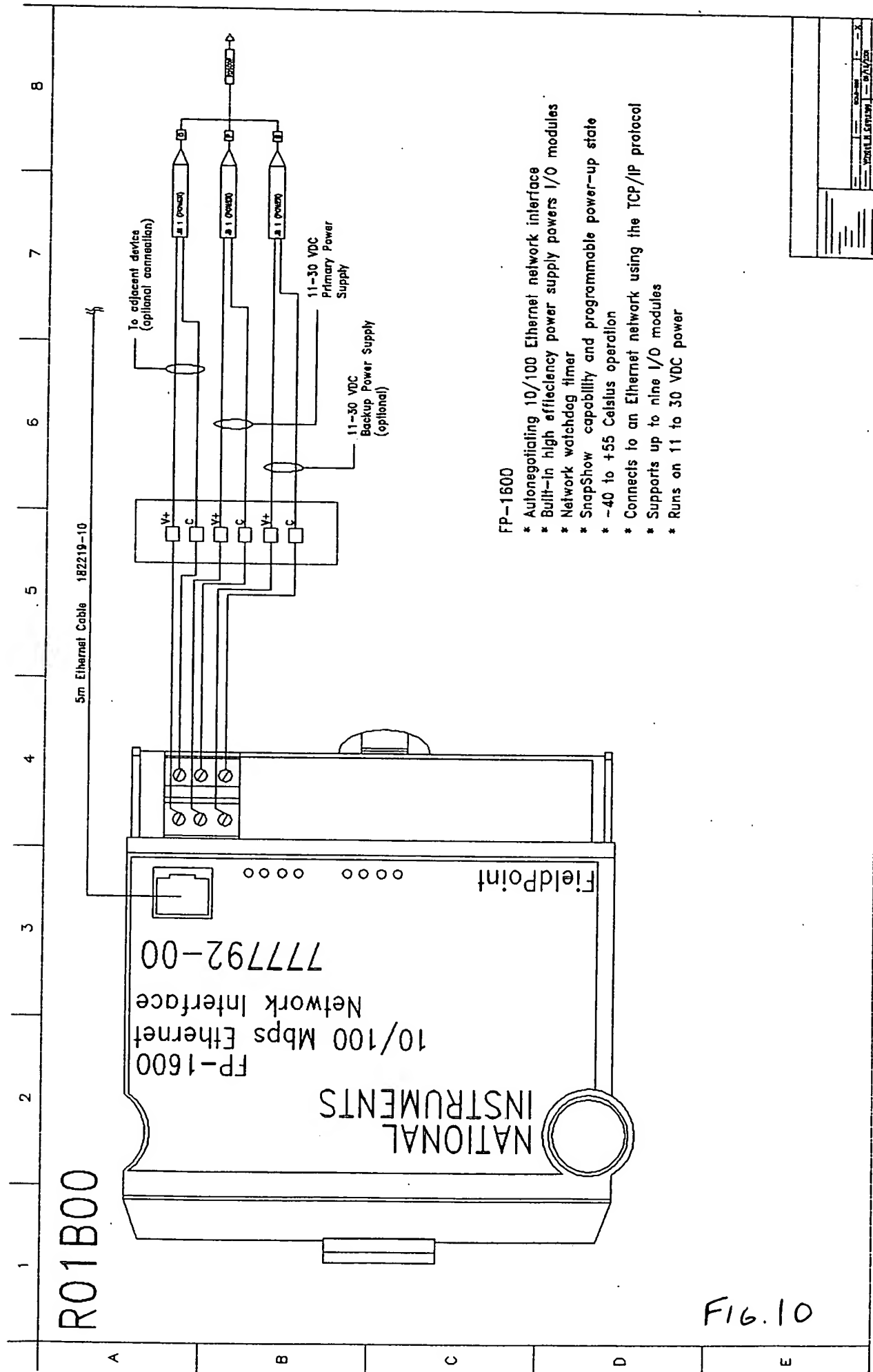
R#TB#

Terminated or I/O Base number (00-03 or 00-08)
 I/O Module Rack number (01-99)

24V DC POWER BUDGET
 FOR RACK 02 CONFIGURATION
 R02B00 Requires = 200 mW
 R02B01 Requires = 400 mW
 R02B02 Requires = 400 mW
 TOTAL POWER REQ. RACK 01&02 = 2.05 W

FIG. 9

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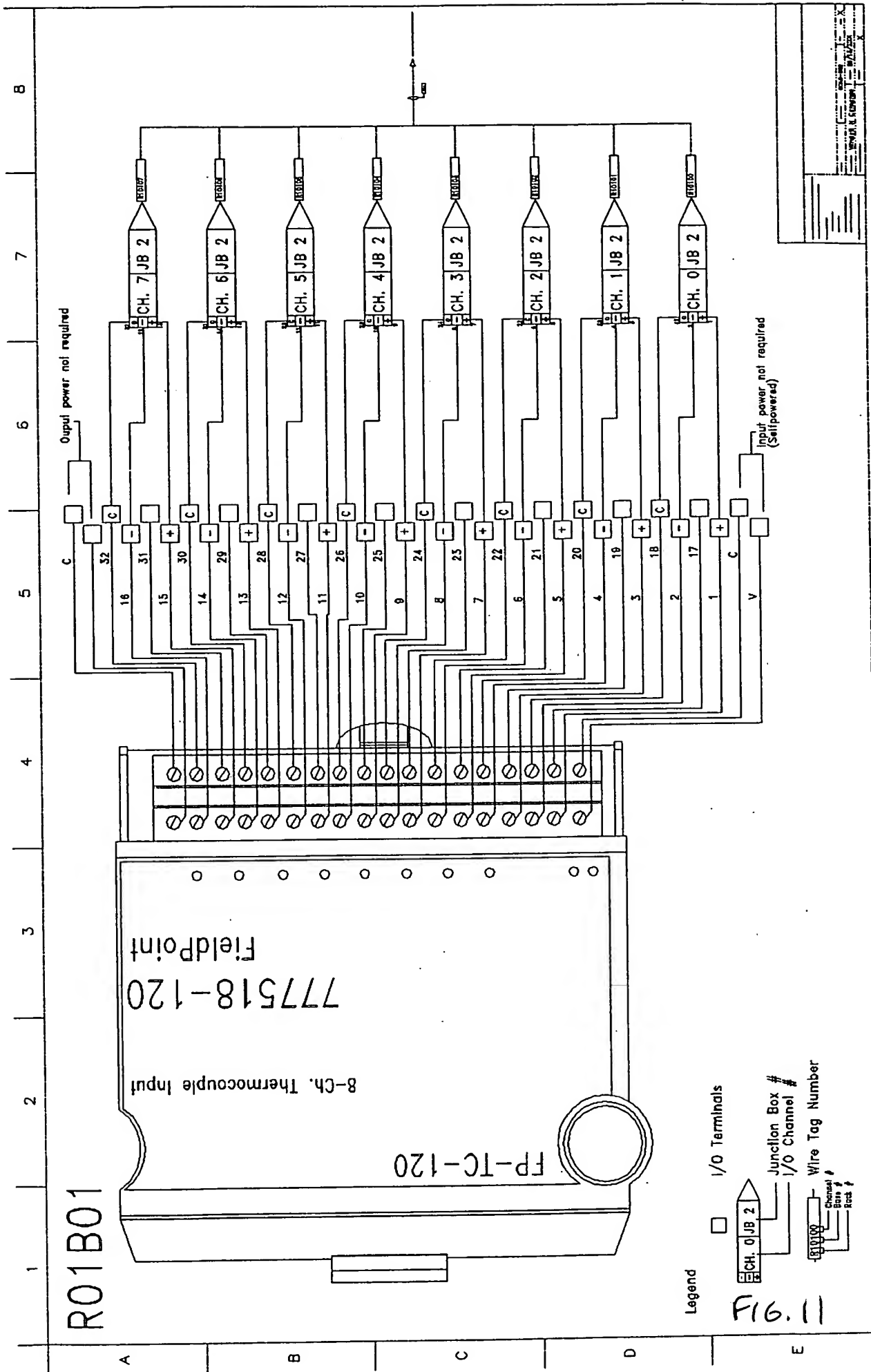


FP-1600

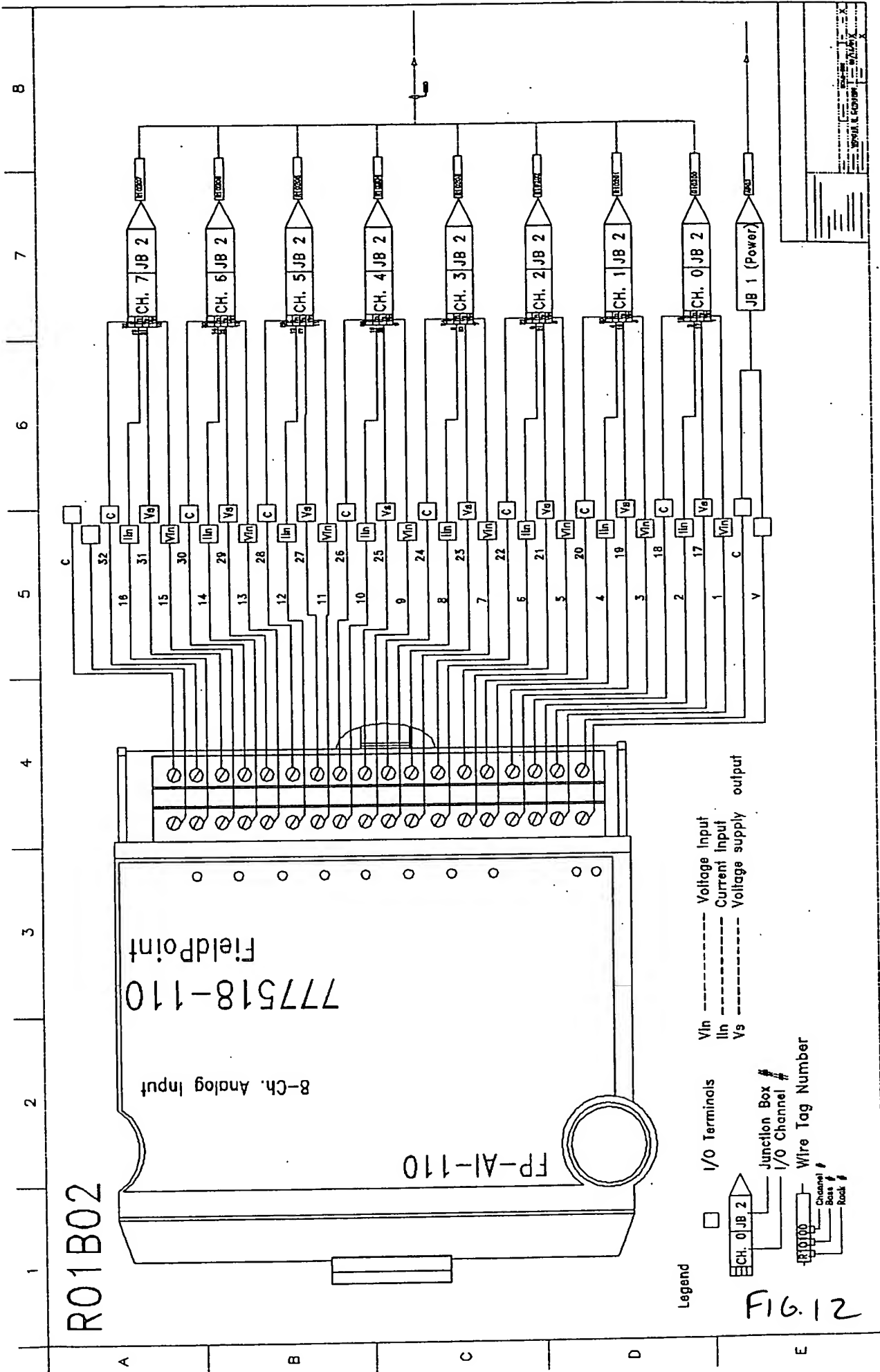
- * Autonegotiating 10/100 Ethernet network interface
- * Built-in high efficiency power supply powers I/O modules
- * Network watchdog timer
- * SnapShot capability and programmable power-up state
- * -40 to +55 Celsius operation
- * Connects to an Ethernet network using the TCP/IP protocol
- * Supports up to nine I/O modules
- * Runs on 11 to 30 VDC power

FIG. 10

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RO1B03

777518-110

8-Ch. Analog Input

FP-AI-110



☐ I/O Terminals

V_{in}	---	Voltage Input
I_{in}	---	Current Input
V_s	---	Voltage supply

Junction Box #
I/O Channel #

Wire Tag Number

FIG. 13

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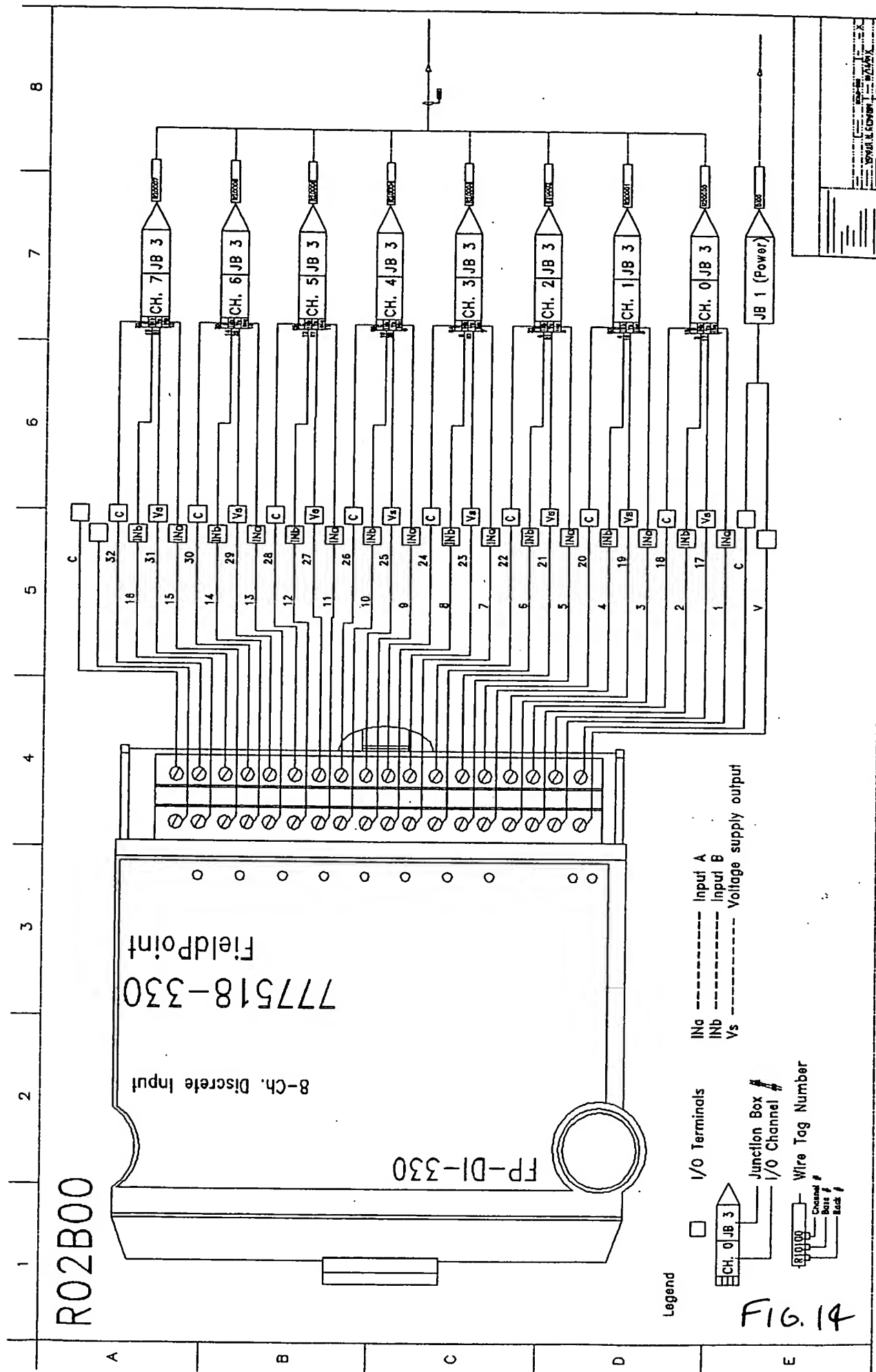


FIG. 14

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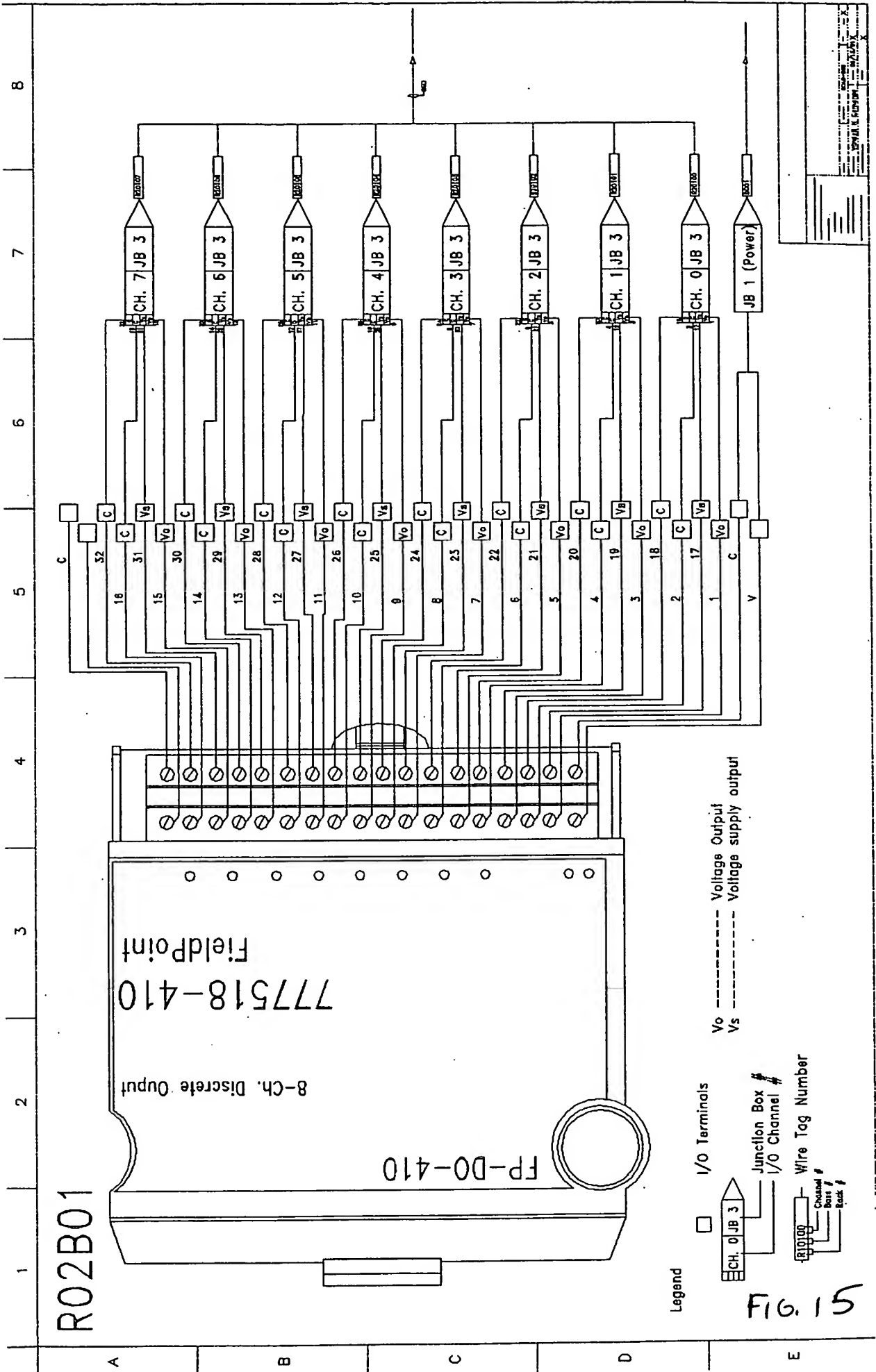


FIG. 15

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R02B02

FP-D0-410
8-Ch. Discrete Output
FieldPoint
777518-410

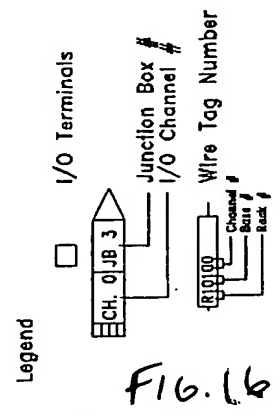
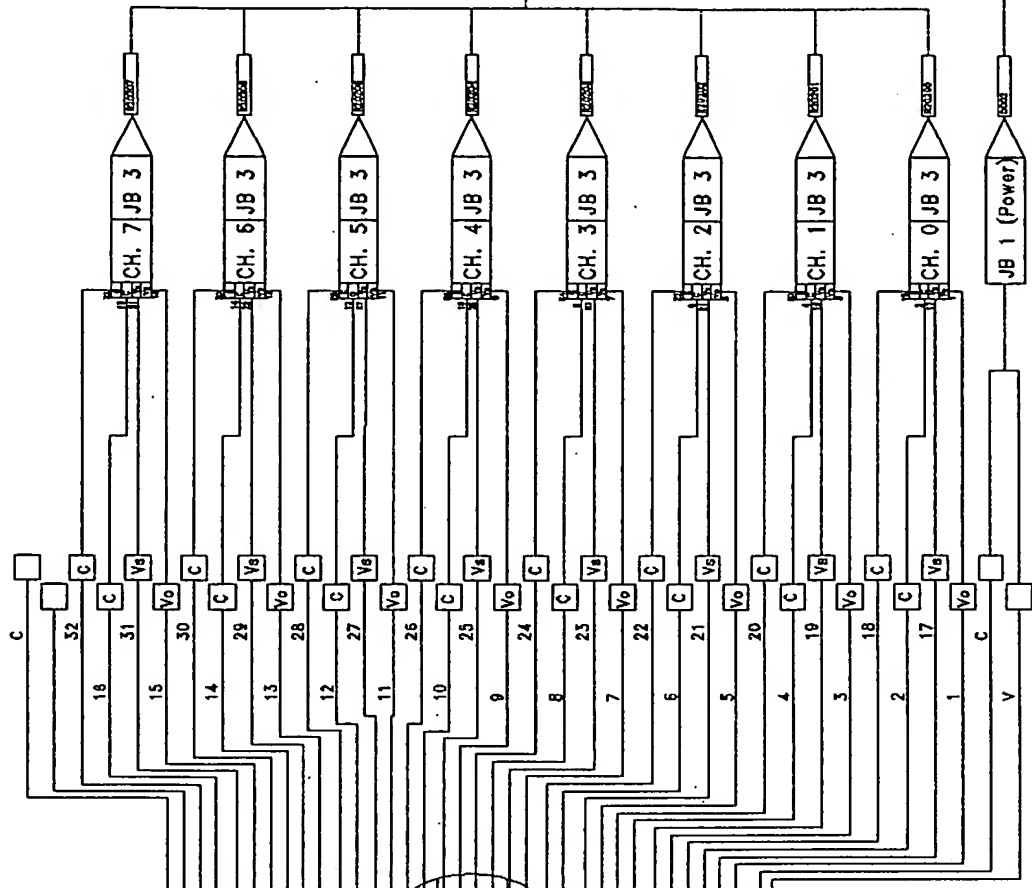


FIG. 16

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BASKIS & ASSOCIATES DRY CYCLE ANAEROBIC DIGESTER INSTRUMENTATION

MODULES

Tag	Description
RO1800	React 1 Base 0 module - Thermal Module
RO1801	React 1 Base 1 module - Thermocouple Module
RO1802	React 1 Base 2 module - Analog Input
RO1803	React 1 Base 3 module - Analog Input
RO1804	React 2 Base 0 module - Discrete Input
RO1805	React 2 Base 1 module - Discrete Input
RO1806	React 2 Base 2 module - Discrete Output

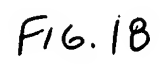
INSTRUMENT

Tag	Description	Modules	Channel
TI-101	Temp. Indicator for BR-101 (Biological Reactor)	RO1801 (Base 1 Base 1)	CH 00
TI-102	Temp. Indicator for BR-102 (Biological Reactor)	RO1801 (Base 1 Base 1)	CH 01
LI-101	Level Indicator for BR-101	RO1801 (Base 1 Base 1)	CH 02
LI-102	Level Indicator for BR-102	RO1801 (Base 1 Base 1)	CH 03
FI-101	Flow Indicator for Gas output	RO1801 (Base 1 Base 1)	CH 04
FI-102	Flow Indicator for Water output	RO1801 (Base 1 Base 1)	CH 05
PI-101	Pressure Indicator for BR-101 (Biological Reactor)	RO1801 (Base 1 Base 1)	CH 06
PI-102	Pressure Indicator for BR-102 (Biological Reactor)	RO1801 (Base 1 Base 1)	CH 07
PSI-101	Pressure Indicator for S-101	RO1801 (Base 1 Base 1)	CH 08
PSI-102	Pressure Indicator for S-102	RO1801 (Base 1 Base 1)	CH 09
LSH-100	Level Switch for S-100	RO1801 (Base 1 Base 1)	CH 10
SV-100	Salinometer Valve - Air Input to AA-100 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 11
SV-101	Salinometer Valve - Air Input to AA-101 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 12
SV-102	Salinometer Valve - Air Input to AA-102 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 13
SV-103	Salinometer Valve - Air Input to AA-103 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 14
SV-104	Salinometer Valve - Air Input to AA-104 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 15
SV-105	Salinometer Valve - Air Input to AA-105 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 16
SV-106	Salinometer Valve - Air Input to AA-106 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 17
SV-107	Salinometer Valve - Air Input to AA-107 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 18
SV-108	Salinometer Valve - Air Input to AA-108 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 19
SV-109	Salinometer Valve - Air Input to AA-109 Air Adjusted Valve	RO1801 (Base 1 Base 1)	CH 20
LSH-120	Level Switch for S-120 (VAV DC FSS)	RO1801 (Base 1 Base 1)	CH 21

FIG. 17

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

A	B	C	D	E
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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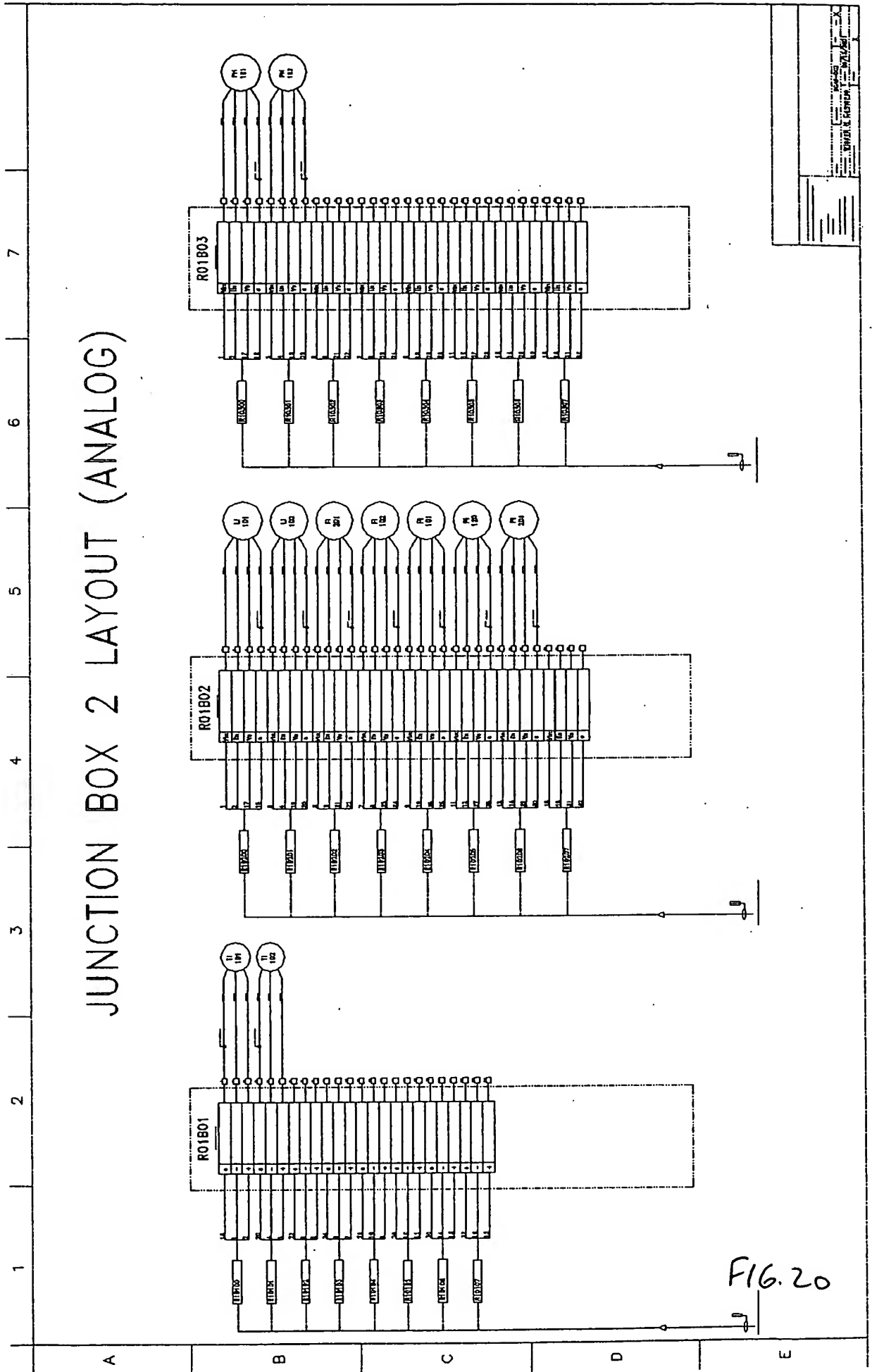
JUNCTION BOX 1 LAYOUT (POWER)

FIG. 19

[illegible]

CONFIDENTIAL

JUNCTION BOX 2 LAYOUT (ANALOG)



CONFIDENTIAL

JUNCTION BOX 3 LAYOUT (DISCRETE)

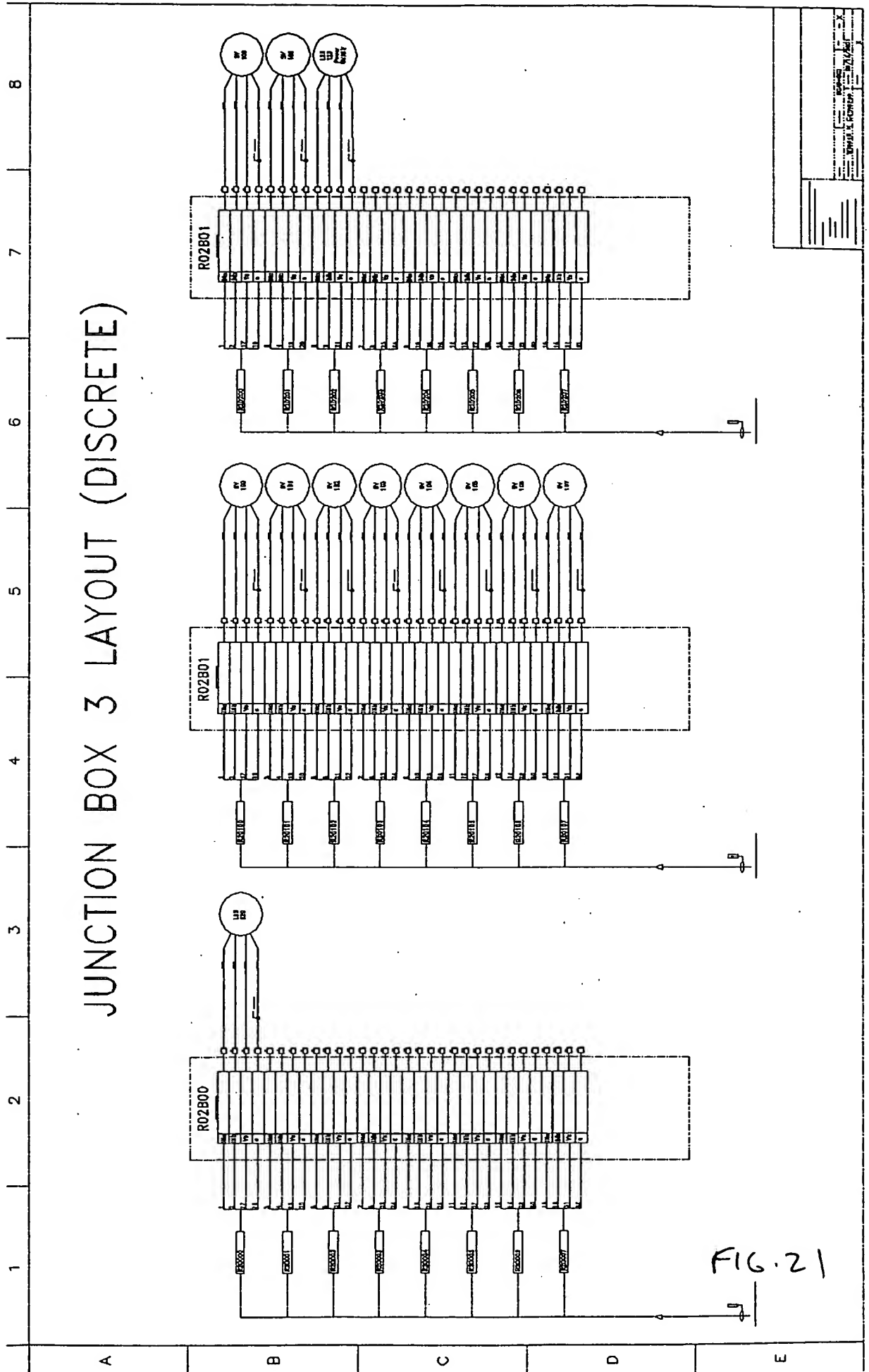


FIG. 21